Amendments to the Claims

1. (Currently Amended) A microprotrusion array for the rotational delivery of a therapeutic fluid substance into tissue, said array comprising:

at least one platen, said platen comprising a microprotrusion surface, and a platen edge, wherein said microprotrusion surface is suitable for attaching a plurality of microprotrusions thereon or therein;

a plurality of microprotrusions attached in or on said microprotrusion surface of said platen in a radial array, wherein each of said microprotrusions is a frustoconical protrusion and comprises at least one scraping edge; and

at least one therapeutic fluid substance retaining means, said therapeutic substance retaining means selected from the group consisting of intra-microprotrusion spacing, one or more recesses between said microprotrusions, one or more areas devoid of microprotrusions, one or more areas of reduced microprotrusion density, one or more areas of microprotrusions attached to the platen in a pattern adapted to direct said substance toward the interior of said array, one or more channels in the platen microprotrusion attachment surface, and combinations thereof, wherein said therapeutic fluid substance retaining means releasably retains said therapeutic fluid substance as the array is used, thereby allowing any therapeutic fluid substance which is not immediately delivered into tissue to remain in the array .

2. (Original) The array of claim 1, wherein the pattern of attached microprotrusions adapted to direct said substance comprises areas of differing microprotrusion densities.

3. (Original) The array of claim 1, wherein said platen edge has a thickness.

4. (Original) The array of claim 1, wherein said platen edge is smooth.

5. (Original) The array of claim 1, wherein said platen edge is beveled.

6. (Original) The array of claim 1, wherein said platen edge is radiused.

7. (Original) The array of claim 1, wherein said microprotrusion surface of said platen is substantially planar.

8. (Original) The array of claim 1, wherein said microprotrusion surface of said platen is substantially lenticular.

9. (Original) The array of claim 1, wherein said microprotrusion surface of said platen is non-uniform.

10. (Original) The array of claim 1, wherein each of said microprotrusions further comprises:

a microprotrusion base having a base center and a base circumference;

a microprotrusion tip; and

a longitudinal axis having a microprotrusion length from said base center to said microprotrusion tip.

11. (Original) The array of claim 1, wherein said microprotrusion surface comprises a plurality of channels disposed between said microprotrusion bases.

12. (Original) The array of claim 11, wherein said channels are disposed in one direction.

13. (Original) The array of claim 11, wherein said channels are disposed in more than one direction.

14. (Original) The array of claim 11, wherein said channels intersect.

15. (Original) The array of claim 1, wherein said microprotrusion lengths vary from said platen edge to the array center.

16. (Original) The array of claim 1, wherein said microprotrusion lengths are in a range from 5 to 500 microns.

17. (Original) The array of claim 1, wherein said microprotrusion lengths are in a range from 50 to 300 microns.

18. (Original) The array of claim 1, wherein said microprotrusion lengths are in a range from 140 to 250 microns.

19. (Original) The array of claim 1, wherein said microprotrusion lengths are in a range from 160 to 220 microns.

20. (Original) The array of claim 3 wherein the thickness of said platen edge varies from the outer most portion of said platen edge to the center of the platen.

21. (Original) The array of claim 1 wherein the at least one platen is integral with a surface of a rotary abrader device.

22. (Original) The array of claim 1 further comprising two or more platens with microprotrusions attached thereto or thereon.

23. (Original) The array of claim 21 wherein the at least one fluid substance retaining means is disposed between said two or more platens.

24. (Original)The array of claim 1, wherein said microprotrusions are arranged in rows offset from one another.

25. (Currently Amended) A method for delivering a therapeutic substance into skin via an abrader device comprising the steps of:

positioning at least one radial array of abrading frustoconical microprotrusions having at least one scraping edge at a delivery site on the skin of a subject, wherein said at least one radial array is attached to an abrader device comprising an abrader housing and a mechanical rotating means adapted to rotate said radial array;

mechanically rotating the array of microprotrusions against the skin of said subject with sufficient force to disrupt and substantially penetrate the stratum corneum of the subject without piercing said stratum corneum;

applying a liquid therapeutic substance to the skin of said subject at the delivery site prior to or simultaneously with said mechanical rotation of said array

retaining said therapeutic fluid substance within said radial array as the radial array is used, thereby allowing any therapeutic fluid substance which is not immediately delivered into tissue to remain in the radial array; and

removing said abrader device from the delivery site,

wherein said at least one microprotrusion array further comprises at least one platen, said platen comprising a microprotrusion surface having a plurality of microprotrusions attached therein or thereon, and a platen edge having a thickness, said microprotrusion array further comprising at least one fluid therapeutic substance retaining means, said therapeutic substance retaining means selected from the group consisting of intra-microprotrusion spacing, one or more recesses between said microprotrusions, one or more areas devoid of microprotrusions, one or more areas of reduced microprotrusion density, one or more areas of microprotrusions attached to the platen in a pattern adapted to direct said substance toward the interior of said array, one or more channels in the platen microprotrusion attachment surface, and combinations thereof.

26. (Original) The method according to claim 25, wherein said abrader housing surrounds the array of microprotrusions, and wherein the abrader housing comprises at least one housing element selected from the group consisting of an upper housing, a lower housing, an inner housing, and an outer housing, and combinations thereof and wherein at least one of said at least one housing element remains stationary during the mechanical rotation of the microprotrusion array, and when said abrader device is positioned against the skin of the subject, said at least one stationary housing component reduces the tendency of the skin at the delivery site to flex during mechanical rotation of the microprotrusion array against the skin at the delivery site.

27. (Original) The method according to claim 25, further comprising the step of applying the abrader device with a predetermined amount of force to the delivery site on the skin of the subject during said mechanical rotation.

28. (Original) The method according to claim 26, wherein the abrader housing releasably attaches to the skin of the subject at the delivery site and holds said skin taut as said microprotrusion array is mechanically rotated.

29. (Original) The method according to claim 25, wherein the microprotrusions are frustoconical protrusions with at least one scraping edge.

30. (Original) The method according to claim 25, wherein the substance is applied on the skin of the patient at the delivery site after the abrader device is positioned at the delivery site.